

In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1 1. (Currently Amended) A method of providing a low cost
2 quantized nonlinear continuous coefficient curve scaler converting
3 consistently spaced sampled input data into consistently spaced
4 resultant scaled data comprising the steps of:

5 providing a quantized coefficient table representing an
6 approximation of the nonlinear continuous curve, said table
7 including a plurality of sets of n coefficients, each set of n
8 coefficients summing to a normalization value;

9 applying said table in hardware to successively locate the
10 sets of n coefficients in the table; and

11 applying the located set of n coefficients to n corresponding
12 sampled input data via a scaling pipeline by summing the product of
13 each of said n coefficients and said corresponding sampled input
14 data to get resultant scaled data.

1 2. (Original) The method of Claim 1 wherein the nonlinear
2 curve approximation in the table must remain symmetrical about its
3 centerline.

3. (Canceled)

1 4. (Original) The method of Claim 1 wherein said applying
2 step includes applying said table in hardware using a step counter
3 to locate the coefficients in the table.

5. (Canceled)

1 6. (Currently Amended) The method of Claim 5 wherein said
2 nonlinear curve is $\sin \frac{(x)}{x}$. ~~$\sin \frac{(x)}{x}$~~ $\frac{(x)}{x}$.

1 7. (Original) The method of Claim 1 wherein said providing
2 step includes generating said quantized coefficient table.

8 and 9. (Canceled)

1 10. A quantized nonlinear curve scaler comprising:
2 a series of latches for latching a stream of source data
3 wherein the content of the latches is the source data elements;
4 a quantized coefficient table storing an approximation of the
5 nonlinear continuous curve, said quantized coefficient table
6 including a plurality of sets of n coefficients, each set of n
7 coefficients summing to a normalization value;
8 a shift and add multiplier comprising a first adder and a
9 shifter for shifting and adding contents of each latch by
10 corresponding coefficients provided by a said quantized coefficient
11 ~~table representing an approximation of a nonlinear continuous curve~~
12 to produce coefficient products of the source data elements; and
13 ~~and~~ a second adder for summing coefficient products from the
14 series of latches to provide the resultant data value.

11. (Canceled)

1 12. (New) The method of Claim 1 wherein:
2 said step of providing a quantized coefficient table provides
3 each set of n coefficients having said normalization value of an
4 integral power of 2; and
5 said step of providing quantized coefficient table provides
6 each coefficient of each set of n coefficients being an integral
7 factor of said normalization value.

1 13. (New) The quantized nonlinear curve scaler of Claim 10
2 wherein:
3 said nonlinear curve approximation in said quantized
4 coefficient table is symmetrical about its centerline.

1 14. (New) The quantized nonlinear curve scaler of Claim 10
2 wherein:
3 said quantized coefficient table provides each set of n
4 coefficients having said normalization value of an integral power
5 of 2; and
6 said quantized coefficient table provides each coefficient of
7 each set of n coefficients being an integral factor of said
8 normalization value.